NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date:

Region: Raleigh Regional Office
County: Wake
NC Facility ID: 9200500
Inspector's Name: Stanley Williams
Date of Last Inspection: 07/29/2015
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Nomaco Inc - Zebulon

Facility Address:
Nomaco Inc - Zebulon
501 NMC Drive
Zebulon, NC 27597

SIC: 3086 / Plastics Foam Products
NAICS: 32615 / Urethane and Other Foam Product (except Polystyrene) Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: N/A
NSPS: N/A
NESHAP:
PSD: N/A
PSD Avoidance: PAL permit for VOC
NC Toxics: N/A
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Mark Stearley Engineering Manager (919) 804-6342 501 NMC Drive Zebulon, NC 27597	John Wojcik Vice President of Operations (919) 380-6652 501 NMC Drive Zebulon, NC 27597	Mark Stearley Engineering Manager (919) 804-6342 501 NMC Drive Zebulon, NC 27597

Application Data

Application Number: 9200500.15A
Date Received: 12/18/2015
Application Type: Modification
Application Schedule: TV-Significant

Existing Permit Data

Existing Permit Number: 06734/T15
Existing Permit Issue Date: 04/06/2015
Existing Permit Expiration Date: 02/28/2018

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2014	0.0100	0.0600	123.57	0.0100	0.4400	6.22E-05	4.29E-05 [Formaldehyde]
2013	0.1200	0.0500	137.43	0.0100	0.5200	7.77E-05	5.36E-05 [Formaldehyde]
2012	0.1000	0.0500	165.24	0.0100	0.7400	6.45E-05	4.46E-05 [Formaldehyde]
2011	0.1000	0.0300	240.02	0.0100	0.8600	6.81E-05	4.70E-05 [Formaldehyde]
2010	0.1200	0.0300	268.32	0.0100	1.22	7.78E-05	5.36E-05 [Formaldehyde]

Review Engineer: Betty Gatano

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 06734/T16
Permit Issue Date:
Permit Expiration Date:

1. Purpose of Application

Nomaco, Inc. – Zebulon Facility (Nomaco) currently holds Title V Permit No. 06734T15 with an expiration date of February 28, 2018 for an extruded polyethylene foam manufacturing facility in Zebulon, Wake County, North Carolina. A permit application for a significant modification under 15A NCAC 02Q .0501(c)(1) was received on December 18, 2015. The permit application was deemed incomplete because no application fee was included with the permit application. The permit application fee was subsequently received on January 11, 2016, and the permit application was deemed complete at that time.

Nomaco currently has eleven permitted foam extrusion lines with three separate Best Available Control Technology (BACT) conditions under Prevention of Significant Deterioration (PSD) for volatile organic compounds (VOC). In this permit application, Nomaco is requesting a Plantwide Applicability Limit (PAL) permit for VOC to maximize operational flexibility at the site. The facility is also requesting to remove one foam extrusion and converting line (ID No. 1029) from the permit, as it has been permanently removed from the facility.

An application for PAL permit must contain all requirements under 40 CFR 51.166(w)(i) – (iii). The permit application deemed complete on January 11, 2016 contained all requirements as discussed below:

(i) A list of all emissions units at the source designated as small, significant or major based on their potential to emit. In addition, the owner or operator of the source shall indicate which, if any, Federal or State applicable requirements, emission limitations, or work practices apply to each unit.

Appendix A to the permit application provides a list of all VOC emission sources and their potential to emit (PTE) designation. The table below shows these designations. Further, Section 5 of the permit application lists all the emission sources at Nomaco emitting VOCs and also provides a summary of the regulatory analysis of these emission sources.

Emission Source ID	Description	PTE Status
ES-1072, ES-1045, ES-1035, ES-1029, ES-1011, ES-1000	Six polyethylene foam extrusion and converting lines	Major
ES-4009	One polyethylene foam extrusion line	Major
ES-1021, ES-1288, ES-1365, ES-1411	Four polyethylene foam extrusion lines	Major
IES-3.1 through IES-3.4	Four research extruders	Small
IES-4.1 through IES-4.5	Five non-contact ink jet printers	Small
IS-B1 and IS-B2	Two No. 2 fuel oil-fired boilers	Small
IES-8	One propane-fired emergency generator	Small
IES-9 and IES-10	One No. 2 fuel oil-fired emergency generator and One No. 2 fuel oil-fired fire water pump	Small

Notes:

- As per 40 CFR 51.166(w)(2)(iii), "*Small emissions unit* means an emissions unit that emits or has the potential to emit the PAL pollutant in an amount less than the significant level for that PAL pollutant, as defined in paragraph (b)(23) of this section or in the Act, whichever is lower."
- As per 40 CFR 51.166(w)(2)(iv), "*Major emissions unit* means: (*a*) Any emissions unit that emits or has the potential to emit 100 tons per year or more of the PAL pollutant in an attainment area; or (*b*) Any emissions unit that emits or has the potential to emit the PAL pollutant in an amount that is equal to or greater than the major source threshold for the PAL pollutant as defined by the Act for nonattainment areas…."

(ii) Calculations of the baseline actual emissions (with supporting documentation). Baseline actual emissions are to include emissions associated not only with operation of the unit, but also emissions associated with startup, shutdown, and malfunction.

Calculation of the baseline actual emissions (BAE) is provided in Appendix A of the permit application. A detailed discussion of the BAE is provided in Section 5 below and Attachment 1 to this permit review.

(iii) The calculation procedures that the major stationary source owner or operator proposes to use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month as required by paragraph (w)(13)(i) of this section.

Section 4.2 of the permit application provides the monitoring approach for the PAL permit. A detailed discussion of the monitoring, recordkeeping, and reporting requirements for the PAL permit is provided in Section 7 below.

The permit application was initially submitted as a "Part 1" significant modification under 15A NCAC 02Q .0501(c)(2), which did not require a Title V Compliance Certification (Form E5). However, a PAL permit must be processed as a "one-step significant" modification under 15A NCAC 02Q .0501(c)(1). Nomaco subsequently submitted the required Form E5 on February 26, 2016. With the submittal of Form E5, this permit application also meets the requirements of the "Part 2" signification modification for emission sources (ID Nos. ES-1021, ES-1288, ES-1365, ES-1411), which were added to the permit as a 15A NCAC 02Q .0501(c)(2) modification under Air Permit No. 06734T15.

2. Facility Description

The facility manufactures extruded polyethylene foam products such as fun noodles, pipe insulation, kneeling mats, hair curlers, foam shipping packaging, wrap-around metal bar protection for playgrounds, pop can holders and concrete slab expansion joint packing material. Currently permitted equipment includes six polyethylene foam extrusion and converting lines, five polyethylene foam extrusion lines, and foam grinding and recycling operations, as well as several insignificant activities.

3. Application Chronology

December 18, 2015	Received application for permit modification. No permit application fee was received with the application.
December 29, 2015	Sent acknowledgment letter indicating that the application for permit modification was incomplete.
January 11, 2016	Permit application fee of $918 received. Permit deemed complete.
February 3, 2016	Draft permit and permit review forwarded for comments.
February 4, 2016	Comments received from Charles McEachern from the Raleigh Regional Office (RRO).

February 11, 2016	Comments received from Mark Cuilla, Permitting Supervisor.
February 18, 2016	Comments received from Dana Norvell, consultant for the facility.
February 23, 2016	Betty Gatano requested that the facility submit a signed E5 form. The form was submitted via e-mail on February 26, 2016.
February 26, 2016	A second draft of the permit and permit review was forwarded for comments.
February 26, 2016	Comments on second draft received from Mark Cuilla.
February 29, 2016	Comments on second draft received from Charles McEachern.
March 1, 2016	Betty Gatano spoke with Dale Overcash and Dana Norvell regarding the facility's continued concerns about the PAL language. Dale Overcash subsequently called William Willets, Permitting Chief, to discuss the facility's concerns.
March 14, 2016	Betty Gatano forwarded a third draft of the permit and permit review for comments.
March 16, 2016	Dana Norvell provided similar comments regarding the PAL language.
March 18 – 28, 2016	Discussions between Dale Overcash and William Willets continued. Mr. Willets assure Mr. Overcash that changes to the PAL would be processed as a minor modification. Mr. Overcash continued to express concern over the language. In the end, Mr. Willets sent an e-mail to Dana NOrvell specifying the PAL language was appropriate and the draft permit will be sent to public notice.
March 30, 2016	Draft permit sent to public notice.

4. Permit Modifications/Changes and TVEE Discussion

The following table describes the modifications to the current permit as part of the modification.

Pages	Section	Description of Changes
Cover page and throughout	-	Updated all dates and permit revision numbers.
Cover page	--	Added footnote stating that the effective and expiration dates for the Actuals Plantwide Applicability Limitations (Actuals PAL) portion of this permit may differ from the effective and expiration dates for the TV permit.

Pages	Section	Description of Changes
3	Section 1.0	• Removed polyethylene foam extrusion and converting line (ID No. ES-1029), as this unit has been permanently removed from the facility. • Removed asterisk and associated footnote specifying that emission sources (ID Nos. ES-1021, ES-1288, ES-1365, and ES-1411) are listed as a 15A NCAC 02Q .0501(c)(2) modification. The Permittee submitted Permit Application No. 9200500.15A in fulfillment of the requirements under 02Q .0501(c)(2).
4	2.1.A.1 – Equipment List	Removed polyethylene foam extrusion and converting line (ID No. ES-1029), as this unit has been permanently removed from the facility.
4	2.1.A – Regulations Table	• Revised BACT limit to account for removing polyethylene foam extrusion line and converting line (ID No. ES-1029). • Added reference to Actuals PAL
4	2.1.A.1.a.i	Revised BACT limit to account for removing polyethylene foam extrusion line and converting line (ID No. ES-1029).
5	2.1.B – Regulations Table	Added reference to Actuals PAL.
6	2.1.C – Regulations Table	Added reference to Actuals PAL.
10	2.2.B	Updated permit condition for 15A NCAC 2D .0958 to specify that no monitoring, recordkeeping, or reporting is required.
12 – 14	2.3	Added permit condition for Actuals PAL.
15	2.4	Moved "Other Applicable Requirements" to Section 2.4.
16 – 26	Section 3.0	Updated General Conditions and List of Acronyms to current version (v4.0 12/17/2015)

One polyethylene foam extrusion and converting line (ID No. 1029) was removed from the Title V Equipment Editor (TVEE) under this permit modification.

5. Establishment of BAE and the Actuals PAL

In accordance with 40 CFR 51.166(w)(6), an actuals PAL level is established as the sum of BAE for each emission source plus the applicable significant level for the PAL pollutant, in this case VOC. When establishing the actuals PAL level for a PAL pollutant, only one consecutive 24-month period must be used to determine the BAE for all existing emissions units. However, a different consecutive 24-month period may be used for each different PAL pollutant. Emissions associated with units that are permanently shut down after this 24-month period must be subtracted from the PAL level. The permitting authority shall specify a reduced PAL level in tons per year in the PAL permit to become effective on the future compliance date of any applicable Federal or State regulatory requirement(s) that the reviewing authority is aware of prior to issuance of the PAL permit. Finally, for newly constructed units (which do not include modifications to existing units) on which actual construction began after the 24-month period, in lieu of adding the baseline actual emissions, the emissions must be added to the PAL level in an amount equal to the potential to emit of the units.

As per the requirements in 15A NCAC 02D .0530(b)(1)(A)[1] to establish BAE, Nomaco is required to select any 24-month consecutive period (baseline period) from a five-year look-back period from the

[1] 15A NCAC 02D .0530(b)(1)(C) specifies that a "for a stationary source, the baseline actual emissions shall be calculated for existing emissions units in accordance with the procedures contained in Part (A) of this Subparagraph, and for a new emissions unit in accordance with the procedures contained in Part (B) of this Subparagraph."

receipt of the completed application. For this analysis, Nomaco used a five-year look-back and determined the highest VOC emissions occurred during calendar years 2011 and 2012. This period was selected as the 24-month period for determining BAE. The 12-month average VOC emissions for 2011 and 2012 is 203 tons, as shown in Attachment 1.

Four polyethylene foam extrusion lines (ID Nos. ES-1021, ES-1288, ES-1365, and ES-1411) were permitted in 2015, and three of the four have been installed and are operating. These lines are considered new units under 40 CFR 51.166(b)(7)(i), which means "…any emissions unit that is (or will be) newly constructed and that has existed for less than 2 years from the date such emissions unit first operated." In accordance with 15A NCAC 02D .0530(b)(1)(B) and (C),[1] the PTE from new emission units is used for establishing PAL levels. The PTE for the new lines is 1,252 tons per year of VOC as shown in Attachment 1.

Emissions associated with units that are permanently shutdown after the 24-month period used to establish BAE must be subtracted from the PAL level, as specified in 40 CFR 51.166(w)(6). Polyethylene foam extrusion and converting line (ID No. 1029) has been permanently shutdown and recently removed from the facility. Average 12-month VOC emissions from this line during the 2011-2012 time period were 14.9 tons per year, are shown in Attachment 1. This amount was subtracted from the PAL level.

In accordance with 40 CFR 51.166(w)(6), an actuals PAL level is established as the sum the BAE plus the PSD significant emission rate of 40 tons per year for VOC as specified in 40 CFR 51.166(b)(3). Using these procedures, the PAL level for Nomaco was calculated as shown in the table below and as shown in more detail in Attachment 1. The PAL level is established as 1,480 tons of VOC per year.

Calculation of PAL	Emissions (tons per year)
Baseline Actual Emissions [Average emissions of 2011 - 2012 baseline period]	203
Add PTE four new polyethylene foam extrusion lines (ID Nos. ES-1021, ES-1288, ES-1365, and ES-1411) [constructed after 2011 – 2012 baseline period]	1,252
Remove BAE for polyethylene foam extrusion and converting line (ID No. 1029)	-14.9
Add significant emission rate for VOC	40
Actuals PAL for VOC	**1,480**

6. Contents of the PAL Permit

The PAL permit must be written in accordance with 40 CFR 51.166(w)(7), "Contents of the PAL Permit." The PAL permit to be added under this modification is provided in Attachment 2. The PAL permit must include all requirements under 40 CFR 51.166(w)(7), as discussed below.

(i) The PAL pollutant and the applicable source-wide emission limitation in tons per year.

As stated previously, the PAL level is for facility-wide VOC emissions and is established as 1,480 tons per year. The limit was established using procedures under 40 CFR 51.166(w)(6). See Section 5 of this review for an overview of how the PAL was established.

(ii) The PAL permit effective date and the expiration date of the PAL (PAL effective period).

The expiration date of the PAL permit is ten years from its effective date. The effective date of the PAL permit is XXXX, 2016, and its expiration date is XXXX, 2026.

(iii) Specification in the PAL permit that if a major stationary source owner or operator applies to renew a PAL in accordance with paragraph (w)(10) of this section before the end of the PAL effective period, then the PAL shall not expire at the end of the PAL effective period. It shall remain in effect until a revised PAL permit is issued by the reviewing authority.

If Nomaco applies to renew the PAL permit in accordance with 40 CFR 51.166(w)(10) before the end of the PAL effective period, then the PAL permit shall not expire at the end of the PAL effective period. It shall remain in effect until a revised PAL permit is issued by the DAQ.

(iv) A requirement that emission calculations for compliance purposes include emissions from startups, shutdowns and malfunctions.

Nomaco must include in emissions calculations for compliance purposes, emissions from startups, shutdowns, and malfunctions. Nomaco uses material balance to calculate actual VOC emissions, so that any emissions occurring during startups, shutdowns, or malfunctions are captured in the emission calculation procedures.

(v) A requirement that, once the PAL expires, the major stationary source is subject to the requirements of paragraph (w)(9) of this section.

Any PAL permit not renewed in accordance with 40 CFR 51.166(w)(10) shall expire at the end of the PAL effective period. Upon PAL permit expiration, Nomaco becomes subject to the requirements in 40 CFR 51.166(w)(9). The DAQ will decide whether and how the PAL allowable emissions will be distributed and issue a revised permit incorporating allowable limits for each emissions unit, as appropriate. The DAQ retains the ultimate discretion to decide whether and how the allowable emissions will be allocated.

(vi) The calculation procedures that the major stationary source owner or operator shall use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month as required by paragraph (w)(3)(i) of this section.

The PAL permit must include calculation procedures to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month.

The Permittee has proposed to use mass balance and emission factors approaches to calculate VOC emissions from various emission units on a monthly and 12-month basis. Section 7 provides details on calculation procedures.

(vii) A requirement that the major stationary source owner or operator monitor all emissions units in accordance with the provisions under paragraph (w)(12) of this section.

See Section 7 below for a discussion of the monitoring requirements in the PAL permit.

(viii) A requirement to retain the records required under paragraph (w)(13) of this section on site. Such records may be retained in an electronic format.

See Section 7 below for a discussion of the recordkeeping requirements in the PAL permit.

(ix) A requirement to submit the reports required under paragraph (w)(14) of this section by the required deadlines.

See Section 7 below for a discussion of the reporting requirements in the PAL permit.

(x) Any other requirements that the reviewing authority deems necessary to implement and enforce the PAL.

The DAQ has no additional requirements for the PAL permit.

7. Monitoring, Recordkeeping, and Reporting

Regulation 40 CFR 51.166(w)(12) – (14) requires that the PAL permit contain adequate monitoring, recordkeeping, and reporting (MRR). The MRR for the PAL permit is discussed in detail in this section, and Attachment 2 to this permit review contains the PAL permit, including the MRR requirements.

Monitoring

Nomaco will comply with monitoring requirements for each emission unit in accordance with 40 CFR 51.166(w)(12). The PAL monitoring system must employ one or more of the four general monitoring approaches meeting the minimum requirements in 40 CFR 51.166 (w)(12)(ii) (a) through (d). VOC emissions from combustion sources are based on fuel usage and emission factors contained in EPA's AP-42. This approach is valid as allowed under 40 CFR 51.166 (w)(12)(ii) (d). Nomaco will use mass balance calculations for its foam extruders and ink jet printers, as allowed under 40 CFR 51.166 (w)(12)(ii) (a) and as discussed below.

Foam Extrusion /Production Lines (ID Nos. ES-1072, ES-1045, ES-1035, ES-1011, ES-1000, ES-4009, ES-1021, ES-1288, ES-1365, and ES-1411)

Isobutane is the only VOC emitted from the facility's foam production process. VOC emissions via several modes, as noted below:

- Fugitive releases from the process line;
- Direct atmospheric releases from the extruder die exhaust vents;
- Fugitive releases from the foam curing area (warehouse); and
- Fugitive releases from the reclaim area.

Fugitive releases constitute the largest share of VOC emissions at the facility. Based on internal measurements made by process engineering staff, Nomaco estimates that 30% of the isobutane injected during production of the foam product is emitted as fugitives along the process line. Another 30% is estimated to be lost in the foam curing area or warehouse. The remaining 40% of the isobutane is retained in the product or is gradually released during shipment of the

product and final use by the customer.[2] Nomaco tracks isobutane usage and emissions are calculated by assuming approximately 40% of the isobutane is retained in the product when it is shipped offsite, and the remaining 60% is released during the extrusion/curing process onsite.

Research Extruders (ID Nos. IES-3.1 through IES-3.5)
Nomaco tracks isobutene usage from the research extruders, and VOC emissions from the research extruders are conservatively estimated to be 100% of the usage.

Research Extruders (ID Nos. IES-3.1 through IES-3.5)
VOC emissions from the ink jet printers are calculated assuming 100% of the VOCs contained in the ink is released. VOC emissions are calculated by multiplying the ink usage, which Nomaco tracks, by the VOC content reported in the MDSDs for each ink.

Recordkeeping
Nomaco will comply with all applicable record keeping requirements in 40 CFR 51.166(w)(13). The facility must retain a copy of all records necessary to determine compliance with any requirement in 40 CFR 51.166(w) and of the PAL permit. Nomaco must retain the records onsite for 5 years from the date of such record. Nomaco must also retain a copy of the PAL permit application and each annual compliance certification for the duration of the PAL effective period plus 5 years.

Reporting
Nomaco will comply with all applicable reporting requirements in 40 CFR 51.166(w)(14). The facility must submit semiannual monitoring reports and deviation reports to the DAQ. The facility also has to submit the results of any re-validation within three months after completion of such revalidation of emissions. The reports must meet the requirements in 40 CFR 51.166(w)(14)(i) through (iii).

8. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS
Nomaco has a diesel-fired fire water pump (ID No. IES-10) subject to "NSPS for Stationary Compression Ignition Internal Combustion Engines," 40 CFR 60, Subpart IIII. No other emission sources at the facility are subject to New Source Performance Standards (NSPS). This modification does not affect the NSPS status of the facility.

NESHAPS/MACT
Nomaco is not a major source of HAP emissions. The propane-fired emergency generator (ID No. IES-8), the No. 2 fuel oil-fired emergency generator (ID No. IES-9), and the diesel-fired fire water pump (ID No. IES-10) are subject to the "NESHAP for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63," GACT Subpart ZZZZ. Additionally, the No. 2 fuel oil boilers (ID Nos. IS-B1 and IS-B2) are subject to the "NESHAP for Industrial, Commercial, and Institutional Boilers at Area Sources," 40 CFR Part 63, Subpart JJJJJJ. No other emission sources at the facility are subject to any other rules under 40 CFR Part 63. This modification does not affect the MACT status of the facility.

[2] Nomaco uses a "Safe to Ship" model to ensure that the amount of gas in its products is such that the products could not become flammable or unsafe during transport to the customer. Nomaco has performed tests on all individual products, and the gas emitted during production and storage varies. The average values, which were used in the permit application for this modification, show that 30% of inputted gas is lost during production, 30% is lost during the curing of the materials in the warehouse. The remaining 40% of the gas remains in the product leaving the site.

PSD

Nomaco is a PSD-major source and is currently subject to three separate BACT limits for six polyethylene foam extrusion and converting lines (ID Nos. ES-1072, ES-1045, ES-1035, ES-1029, ES-1011, ES-1000), one polyethylene foam extrusion line (ID No. ES-4009), and four polyethylene foam extrusion lines (ID Nos. ES-1021, ES-1288, ES-1365, ES-1411). As noted previously, Nomaco is requesting to remove polyethylene foam extrusion line (ID No. ES-1029), which has been permanently removed from the facility. With the removal of this line from the permit, the associated long-term BACT limit will be decreased accordingly, as shown in the following table. Attachment 3 to this review shows how the revised BACT limit was determined. The permit will be modified to account for the revised BACT limit under this permit modification.

Currently Permitted Emission Sources	BACT limits	Modified Emission Sources	Revised BACT limit
Six polyethylene foam extrusion and converting lines: ES-1072 ES-1045 ES-1035 ES-1029 ES-1011 ES-1000	• 833 tons of VOC per consecutive 12 month period. • 0.6 lbs of VOC per cubic foot of foam	Five polyethylene foam extrusion and converting lines: ES-1072 ES-1045 ES-1035 ES-1011 ES-1000	• 763 tons of VOC per consecutive 12 month period. • 0.6 lbs of VOC per cubic foot of foam

A facility-wide Actuals PAL permit will be added to the permit under this modification, as discussed in detail above.

112(r)

Nomaco is subject to the 112(r) "Prevention of Accidental Releases" requirements because it stores isobutane used in the polyethylene foam process in amounts greater than the applicability threshold. This permit modification does not affect this status.

CAM

Particulate matter from the grinders, the agglomerator, and silos at Nomaco are controlled via filters or cyclones. As indicated in the permit review for the most recent permit renewal, pre-controlled PM_{10} emissions from these emission sources are less than 100 tons per year.[3] Therefore, the facility is not subject to CAM. This permit modification does not affect this status.

9. Facility-Wide Air Toxics

The facility is not currently subject to NC Air Toxics regulations. This permit modification does not affect this status.

10. Facility Emissions Review

Actual emissions for criteria pollutants and HAPs are provided in the header of this permit review.

11. Compliance Status

[3] Brian Bland (March 1, 2013)

DAQ has reviewed the compliance status of this facility. During the most recent inspection conducted on July 29, 2015, Mr. Stan Williams of the Raleigh Regional Office indicated that the facility appeared to be in compliance with all applicable requirements. Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was submitted on February 26, 2016.

12. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. Virginia is an affected areas within 50 miles of this facility and will be notified accordingly.

13. Other Regulatory Considerations

- A P.E. seal is required for this application and was included in the permit application.
- A zoning consistency determination was not required for this application.
- A permitting fee of $918 was required for this application but was not included with the permit application. The fee was subsequently received on January 11, 2016.
- The permit application was signed on December 15, 2015 by Chuck Marckwardt, Vice President of Operations, who was the responsible official at the time. On January 27, 2016, Nomaco submitted a letter requesting that the responsible official be changed to John Wojcik, Vice President of Operations. This change does not affect the status of the permit application, which was deemed complete when the permit fee was received on January 11, 2016.

14. Recommendations

The permit modification application for Nomaco, Inc. – Zebulon Facility located in Zebulon, Wake County, North Carolina has been reviewed by DAQ to determine compliance with all procedures and requirements. The DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 06724T16.

ATTACHMENT 1
Calculation of PAL

Step 1 - Establishing Baseline Actuals Emissions

Emission Source	Description	VOC Emissions (tpy)			
		2011	2012	2013	2014
ES-1072, ES-1045, ES-1035, ES-1029, ES-1011, ES-1000	Six polyethylene foam extrusion and converting lines	106.0	72.4	60.7	50.6
ES-4009	One polyethylene foam extrusion line	132.8	91.6	75.5	71.8
IES-3.1 through IES-3.4	Four research extruders	1.3	1.3	1.3	1.2
IES-4.1 through IES-4.5	Five non-contact ink jet printers	0.0	0.0	0.0	0.0
IS-B1 and IS-B2	Two No. 2 fuel oil-fired boilers	7.9E-04	7.5E-04	9.0E-04	7.2E-04
IES-8	One propane-fired emergency generator	2.1E-05	0.0E+00	0.0E+00	0.0E+00
IES-9 and IES-10	One No. 2 fuel oil-fired emergency generator and One No. 2 fuel oil-fired fire water pump	--	1.9E-03	1.9E-03	2.4E-03
	Total	**240.0**	**165.2**	**137.4**	**123.6**

24-Month Period	VOC Emissions (total tons)	12-month average VOC Emissions (tpy)
CY2011 - CY2012	**405.3**	**202.6**
CY2012 - CY2013	302.7	151.3
CY2013 - CY2014	261.0	130.5

Step 2 - Establishing Potential VOC Emissions from New Sources Permitted in 2015

Proposed Extrusion Line	Description	Maximum Isobutane Usage (kg/hr)	Maximum Isobutane Usage (tons/hr)	Isobutane Usage during Start-up (tons/hr)	Total Isobutane Usage		
					Start-up time (tpy)	Production (tpy)	Total (tpy)
ES-1021	Polyethylene foam extrusion line	50	0.055	0.028	24.1	434.1	458.3
ES-1288	Polyethylene foam extrusion line	50	0.055	0.028	24.1	434.1	458.3
ES-1365	Polyethylene foam extrusion line	50	0.055	0.028	24.1	434.1	458.3
ES-1411	Polyethylene foam extrusion line	70	0.077	0.039	33.8	607.8	641.6
	Total	**220**	**0.242**	**0.121**	**106.1**	**1,910.20**	**2,016.30**

Notes:

· New lines ES-1021, ES-1288, and ES-1365 will run with a maximum isobutane usage of 50 kg/hr and ES-1411 will run with a maximum isobutane usage of 70 kg/hr.

· A conservative estimate is that each line runs 8,760 hours per year, with 10% of the time allotted to startup (876 hours) and the remaining 90% of the time (7,884 hours) allotted to production.

· Isobutane usage factor during startup is assumed to be 50% of maximum usage.

VOC Emissions		
Potential emissions during startup =	106.1	tpy
Potential emissions from die head and process line assumed to be 30% of total production usage =	573.1	tpy
Potential emissions from warehouse assumed to be 30% of total production usage =	573.1	tpy
Potential VOC emissions from the four new process lines =	**1,252.30**	**tpy**

ATTACHMENT 1
Calculation of PAL

Step 3 - Removing BAE for Emission Sources Permanently Shutdown

Emission Sources Removed					
Emission Source	Description	VOC Emissions (tpy)			
		2011	2012	2013	2014
ES-1029	One polyethylene foam extrusion and converting line	17.7	12.1	10.1	8.4

Notes:
Emissions from ES-1029 were calculated as 1/6 of the emissions from the six polyethylene foam extrusion and converting lines.

24-Month Period	VOC Emissions (total tons)	12-month average VOC Emissions (tpy)
CY2011 - CY2012	**29.7**	**14.9**
CY2012 - CY2013	22.2	11.1
CY2013 - CY2014	18.5	9.3

Step 4 - Establishing PAL Level

Calculation of PAL	Emissions (tons/year)
Baseline Actual Emissions [Average emissions of 2011 - 2012 baseline period]	203
Add PTE four polyethylene foam extrusion lines (ID Nos. ES-1021, ES-1288, ES-1365, and ES-1411) [constructed after 2011 – 2012 baseline period]	1,252
Remove BAE for polyethylene foam extrusion and converting line (ID No. 1029)	-14.9
Add significant emission rate for VOC	40
Actuals PAL for VOC	**1,480**

ATTACHMENT 2
PAL Permit

2.3-Actuals PAL Permit Requirements

A. VOC emissions limits

1. The Actuals Plantwide Applicability Limitations (Actuals PAL) of 1,480 tons of VOC emissions per rolling 12-month period shall not be exceeded from the following PAL Emissions Units:
   a. Foam Extrusion / Production Operations:
      - Five polyethylene foam extrusion and converting lines **(ID Nos. ES-1072, ES-1045, ES-1035, ES-1011, and ES-1000)**
      - One polyethylene foam extrusion line **(ID No. ES-4009)**
      - Four polyethylene foam extrusion lines **(ID Nos. ES-1021, ES-1288, ES-1365, and ES-1411)**
   b. Combustion Sources:
      - Two No. 2 fuel oil-fired boilers **(ID No. IS-B1 and IS-B2)**
      - One propane-fired emergency generator **(ID No. IES-8)**
      - One No. 2 fuel oil-fired emergency generator **(ID No. IES-9)**
      - One No. 2 fuel oil-fired fire water pump **(ID No. IES-10)**
   c. Other Sources:
      - Four research extruders **(ID Nos. IES-3.1 through IES-3.4)**
      - Five non-contact ink jet printers **(ID Nos. IES-4.1 through IES-4.5)**

Effective and Expiration Date

2. The Effective Date for this PAL shall be on **XXXX, 2016.**
3. The Expiration Date for this PAL shall be on **XXXX, 2026.**
4. The Permittee may make modifications or additions to the PAL emissions units in Section 2.3 A.1.a-c above, without requiring a modification to the PAL provisions of this permit if the emissions from the modified or additional emissions units will be calculated according to the monitoring methods specified below and the plant-wide actual VOC emissions will remain less than 1,480 tons per rolling 12 months. (Note: This PAL provision does not relieve the Permittee from applying for and receiving a revised construction and operating permit as required by 15A NCAC 2Q .0101.)
5. If the Permittee applies to renew the PAL permit in accordance with 40 CFR 51.166(w)(10) before the end of the PAL effective period, then the PAL permit shall not expire at the end of the PAL effective period. It shall remain in effect until a revised PAL permit is issued by the DAQ. [40 CFR 51.166(w)(7)(iii)]
6. Once the PAL permit expires, the Permittee is subject to the requirements in 40 CFR 51.166(w)(9). Upon PAL permit expiration, the DAQ shall decide whether and how the PAL allowable emissions will be distributed and issue a revised permit incorporating allowable limits for each PAL emissions unit, as the DAQ determines appropriate. The DAQ will retain the ultimate discretion to decide whether and how the allowable emissions will be allocated. [40 CFR 51.166(w)(7)(v)]

Testing [15A NCAC 02Q .0508(f)]

7. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this testing indicate that the VOC emissions on a 12-month rolling basis have exceeded the actual PAL in Section 2.3. A.1., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

8. The Permittee shall record isobutane throughput on a monthly basis for the foam extrusion/production lines **(ID Nos. ES-1072, ES-1045, ES-1035, ES-1011, ES-1000, ES-4009, ES-1021, ES-1288, ES-1365, and ES-1411)**. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.
9. The Permittee shall calculate VOC emissions per month after the end of each month for the foam extrusion/production lines **(ID Nos. ES-1072, ES-1045, ES-1035, ES-1011, ES-1000, ES-4009, ES-1021, ES-1288, ES-1365, and ES-1411)** as follows:

   VOC emissions = monthly isobutane usage amount x (1 - % retained in foam)

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the VOC emissions are not calculated monthly or if the records of the calculations are not maintained.
10. The Permittee shall record isobutane throughput on a monthly basis for the four research extruders **(ID Nos. IES-3.1 through IES-3.4)**. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.
11. The Permittee shall calculate VOC emissions per month after the end of each month for the four research extruders **(ID Nos. IES-3.1 through IES-3.4)** as the amount of isobutane used during the month. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the VOC emissions are not calculated monthly or if the records of the calculations are not maintained.
12. The Permittee shall calculate VOC emissions per month after the end of each month for the No. 2 fuel oil-fired boilers **(ID No. IS-B1 and IS-B2)**, one propane-fired emergency generator **(ID No. IES-8)**, the No. 2 fuel oil-fired emergency generator **(ID No. IES-9)**, and the No. 2 fuel oil-fired fire water pump **(ID No. IES-10)** as follows:

   VOC emissions = monthly fuel usage x VOC emission factor from EPA's AP-42

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the VOC emissions are not calculated monthly or if the records of the calculations are not maintained.
13. The Permittee shall calculate VOC emissions per month after the end of each month for the five non-contact ink jet printers **(ID Nos. IES-4.1 through IES-4.5)** as follows:

$$\text{VOC emissions} = \sum_{i=1}^{n} (\text{ink usage})_i * (\text{VOC content of the ink})_i$$

   i = Subscript denoting a specific solvent or ink used during the month
   n = The number of different solvents and/or inks used during the month

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the VOC emissions are not calculated monthly or if the records of the calculations are not maintained.
14. The Permittee shall include in emissions calculations for compliance purposes emissions from startups, shutdowns, and malfunctions. [40 CFR 51.166(w)(7)(iv)]
15. The Permittee shall record and report maximum potential emissions without considering enforceable emission limitations or operational restrictions for a PAL emissions unit during any period of time that there is no monitoring data, unless another method for determining emissions during such periods is specified in the PAL permit. Notwithstanding the foregoing, the Permittee may consider actual production or operating data in determining its emissions for such a period if the Permittee has written records of such data and if the data are substantially the same as or similar in form or content to the monitoring data required by the PAL permit. The Permittee shall be deemed in noncompliance with

15A NCAC 02D .0530 if the Permittee does not comply with the requirements of this Section 2.3 A. [40 CFR 51.166(w)(12)(vii)]

16. The Permittee shall determine facility-wide VOC emissions per month using the emissions calculations above. Calculations and the total amount of facility-wide VOC emissions shall be recorded monthly in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the 12-month rolling facility-wide VOC emissions exceed the limit in Section 2.3 A.1 above or the facility-wide VOC emissions are not recorded.
17. The Permittee shall retain on site a copy of all records necessary to determine compliance with any requirement in 40 CFR 51.166(w) and of the PAL, including a determination of each PAL emission unit's 12-month rolling total emissions, for 5 years from the date of such record. The records may be retained in electronic format. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained. [40 CFR 51.166(w)(7)(viii) and 40 CFR 51.166(w)(13)(i)]
20. The Permittee shall retain a copy of the following records for the duration of the PAL effective period plus 5 years:
    a. A copy of the PAL permit application and any applications for revisions to the PAL, and
    b. Each annual certification of compliance pursuant to Title V and the data relied on in certifying the compliance. This requirement applies only to the data used to certify compliance with the terms of the actual PAL permit in this Section 2.3.

    The records may be retained in electronic format. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained. [40 CFR 51.166(w)(7(viii) and 40 CFR 51.166(w)(13)(ii)]

Reporting [15A NCAC 02Q .0508(f) and 40 CFR 51.166(w)(7)(ix) and 40 CFR 51.166(w)(14)

21. The Permittee shall submit semiannual monitoring reports and prompt deviation reports to the reviewing authority in accordance with the applicable Title V operating permit program. The reports shall meet the requirements in paragraphs 40 CFR 51.166(w)(14)(i) through (iii).
    a. Semiannual report. The semiannual report shall be submitted to the Regional Air Quality Supervisor postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December, and July 30 of each calendar year for the preceding six-month period between January and June. This report shall contain the information required in paragraphs 40 CFR 51.166(w)(14)(i)(a) through (g).
        i. The identification of Permittee and the permit number.
        ii. Total annual emissions (tons/year) based on a 12-month rolling total for each month in the reporting period recorded pursuant to paragraph 40 CFR 51.166 (w)(13)(i).
        iii. All data relied upon, including, but not limited to, any Quality Assurance or Quality Control data, in calculating the monthly and annual PAL pollutant emissions.
        iv. A list of any PAL emissions units modified or added to the major stationary source during the preceding 6-month period.
        v. The number, duration, and cause of any deviations or monitoring malfunctions (other than the time associated with zero and span calibration checks), and any corrective action taken.
        vi. A notification of a shutdown of any PAL permit monitoring system, whether the shutdown was permanent or temporary, the reason for the shutdown, the anticipated date that the monitoring system will be fully operational or replaced with another monitoring system, and whether the PAL emissions unit monitored by the monitoring system continued to operate, and the calculation of the emissions of the pollutant or the number determined by method included in the permit, as provided by 40 CFR 51.166(w) (12)(vii).
        vii. A signed statement by the responsible official (as defined by the applicable Title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.
    b. Deviation report. The Permittee shall promptly submit reports of any deviations or exceedance of the PAL requirements, including periods where no monitoring is available. A report submitted

pursuant to 40 CFR 70.6(a)(3)(iii)(B) of this chapter shall satisfy this reporting requirement. The deviation reports shall be submitted within the time limits prescribed by the applicable program implementing 40 CFR 70.6(a)(3)(iii)(B). The reports shall contain the following information:

i. The identification of owner and operator and the permit number;
ii. The PAL requirement that experienced the deviation or that was exceeded;
iii. Emissions resulting from the deviation or the exceedance; and
iv. A signed statement by the responsible official (as defined by the applicable Title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.

c. Re-validation results. The Permittee shall submit to the Regional Air Quality Supervisor the results of any re-validation within three months after completion of such revalidation.

ATTACHMENT 3

Revised BACT Limit for Five Polyethylene Foam Extrusion and Converting Lines (ID Nos. ES-1072, ES-1045, ES-1035, ES-1011 and ES-1000)

BACT LIMIT (2015)						
Extrusion Line	**Maximum Isobutane Usage (kg/hr)**	**Maximum Isobutane Usage (tons/hr)**	**Isobutane Usage during Start-up (tons/hr)**	**Total Isobutane Usage**		
				Start-up (tpy)	**Production (tpy)**	**Total (tpy)**
ES-1072	8	0.0088	0.0044	8	62	69
ES-1045	8	0.0088	0.0044	8	62	69
ES-1035	8	0.0088	0.0044	8	62	69
ES-1029	8	0.0088	0.0044	8	62	69
ES-1011	24	0.0264	0.0132	23	185	208
ES-100	40	0.044	0.022	39	308	347
BACT LIMIT	**96**	**0.1056**	**0.0528**	**93**	**740**	**833**
REVISED BACT LIMIT (2016)						
ES-1072	8	0.0088	0.0044	8	62	69
ES-1045	8	0.0088	0.0044	8	62	69
ES-1035	8	0.0088	0.0044	8	62	69
ES-1011	24	0.0264	0.0132	23	185	208
ES-100	40	0.044	0.022	39	308	347
BACT LIMIT	**88**	**0.0968**	**0.0484**	**85**	**678**	**763**

Notes:

1) When this BACT limit was developed, it was assumed that 100% of VOC emitted onsite.

2) A conservative estimate is that each line runs 8,760 hours per year, with 20% of the time allotted to startup and the remaining 80% of the time allotted to production.

3) Isobutane usage factor during startup is assumed to be 50% of maximum usage.